

Risk assessment and mitigation

Group 21
Generic Games

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Extended by

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Risk Identification

In order to identify risks we first conducted a work breakdown and listed the various tasks required for each section of the project. We did this first as it made identification easier, and lowered the number of unidentified risks. It also allowed us to determine which sections of the project had the most risks, which also aided us in our monitoring and mitigation strategy. We then worked through each section of the project and identified risks by brainstorming as a group. We used brainstorming as it allowed us to consider multiple perspectives which ensured that we didn't miss any risks. Furthermore by discussing the risks as a group we were able to challenge each other's suggestions and refine them, so that the risks identified were of a higher quality.

Risk Analysis

We then analysed the risks by assigning each one a likelihood and severity rating [fig.1]. We did this by group discussion and referring to literature to aid us in our decision. By consulting literature, we were able to consider the impacts of similar risks and appropriately allocate the likelihood and severity ratings. The likelihood allowed us to gauge the probability of a risk occurring, and the severity measured the impacts of each risk on the project. For both the likelihood and severity ratings, we used qualitative values from low to high as it made classification and prioritisation easier.

Risk Planning and Mitigation

We then developed avoidance strategies by brainstorming reasons why a particular risk would occur. By understanding the causes, we were able to find the most appropriate strategy for each risk. We then analysed the higher severity risks, and suggested ideas for mitigation by brainstorming and using online resources to aid us in our decisions. This allowed us to find proven methods that limit the exposure from such risks.

Risk Monitoring

We allocated owners for each risk to assess the likelihood and severity throughout the course of the project. We sorted the risks by the different sections of the project and assigned them to the corresponding members and ensured that there were at least 2 people monitoring each risk. This was done so that if a team member was absent or unavailable the risk would still be monitored. We also reviewed the risks at the end of each meeting to identify any changes that had to be made. This made sure that all members were aware of any changes to the risks or strategies, which ensured that the most suitable strategies were being used.

Presentation

The risks were documented using a risk register [fig.1], which also contained the likelihood and severity ratings as well as the owners of each risk. We included a risk type column to group similar risks, which made it easier to locate risks and identify which sections of the project were most vulnerable. We also organised the risks within each group by their severity and likelihood, this made it easier to prioritise our time with the risks that were most important.

Extended Risk Report

When extending this table from group 21, we carried out another risk assessment, identifying who would be responsible for the 19 risks already listed, as well as adding new ones based on the new, larger, project scope.

| ID | Type | Description | Likelihood | Severity | Mitigation | Owner |
|-----|---------------------|--|------------|----------|---|---------------------|
| R5 | Product and Project | The implementation is not well documented. | L | H | Agree upon documentation style that all coders must follow. Before pushing any code to Git it must be documented. | Zac, Oli |
| R6 | Product and Project | Different code uploaded by programmers don't work together. | M | H | Weekly code review. | Zac, Oli |
| R20 | Product and Project | The tests aren't thorough enough, or don't work correctly | L | M | Keep in communication with implementation Weekly code review | Muaz, Teddy |
| R21 | Product and Project | No continuous integration means code developed by separate people doesn't work once merged together. | M | H | Weekly review with implementation and testing Ensure communication channels are used | Cameron |
| | | | | | | |
| R12 | Requirements | Requirements are poorly defined which may lead to scope creep | L | H | Systematically capture all requirements through the use of interviews, group discussions, use cases and prototypes. | Olivia, Nursyarmila |
| R16 | Requirements | If a user requirement | M | L | Implement using the | Olivia, |

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|----|---------|--|---|---|--|-------------------|
| | | changes or is no longer needed, identifying every change that need to be made in the implementation can be difficult and may extend the schedule | | | system requirements, and organise the requirements by the corresponding user requirements. | Nursyarmila |
| | | | | | | |
| R1 | Project | Someone becomes unavailable | M | M | For each section, there are 1 or more named people responsible. There are then at least two “back-up” people, who can complete that section if the original people cannot. There is a further “last resort”, if none of the above people are able to complete the section. | All of us |
| R3 | Project | A delay in a task can cause delays in dependent tasks. | M | M | Appropriately estimate the complexity of each section, and provide realistic deadlines | All |
| R4 | Project | Class diagrams and object diagrams are not finished on time according to our timeline. The implementation may not be finished on time | L | H | Ensure deadlines are met. Add extra time on our timeline as a margin | Zac, Oli, Cameron |
| R7 | Project | Different programmers working on the same requirement. | L | L | Create a schedule for the implementation. Assign different requirements to different programmers. Communication available between programmers. | Zac, Oli |
| R8 | Project | One of the programmers is unavailable | L | M | Involve the other two programmers. Split up the work between them. | Zac, Oli |
| R9 | Project | There is less | M | L | Hold regular voice | All of us |

| | | | | | | |
|-----|---------|---|---|---|--|---------------------|
| | | communication within the group, when working remotely | | | calls and have text/voice channels for each section of the project. | |
| R10 | Project | Inaccurate project management results in us not knowing if we are behind schedule. | L | M | Assess progress with weekly gantt charts. | Nursyarmila |
| R17 | Project | Failure in identifying complex components of the project and allocating time appropriately. | L | M | Create a project breakdown and a gantt chart to aid in appropriate time allocation. | Olivia |
| R18 | Project | People's assignments don't match their strengths | M | M | Conduct the project breakdown as a group and let each member choose the tasks they want to do. | Zac |
| R19 | Project | Low productivity either individually or as a group. | L | L | Effective project management using weekly gantt charts and effectively communicating any adjustments that need to be made. | Olivia, Nursyarmila |
| R22 | Project | Strikes mean that the group doesn't receive any guidance it needs | H | M | Keep notes of how strikes affect us Discuss issues with course reps | All |
| | | | | | | |
| R2 | Product | Implementation doesn't meet the requirements of the stakeholder | M | M | Trace the system requirements directly from the user requirements, which are sourced from the stakeholder | Zac, Oli |
| R14 | Product | Code has bugs and logical errors | M | M | Test frequently, follow coding best practices and peer review code. | Zac, Oli |
| R15 | Product | Implementation of components that aren't as important, can extend the schedule and result | L | L | Organise tasks by importance | Zac, Oli |

| | | | | | | |
|-----|-----------------|--|---|---|--|-------------|
| | | in delays | | | | |
| | | | | | | |
| R11 | Technology | The requirements can't be met with the chosen framework | L | M | Check thoroughly before implementation, and have a backup option just in case. | Zac, Oli |
| R23 | Technology | Google Docs or Github goes offline, meaning we cannot access our files | L | H | Keep offline backups | Everyone |
| R24 | Technology | The stated tests cannot be carried out with the chosen method | L | M | Set reasonable testing goals | Muaz, Teddy |
| | | | | | | |
| R13 | Risk Management | Poor risk management results in unidentified risks which could jeopardise the project. | L | M | Review risks weekly | Nursyarmila |

fig.1